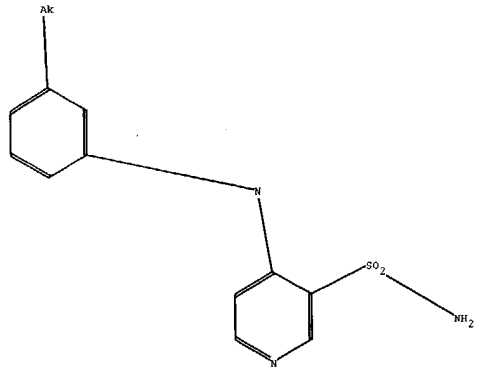
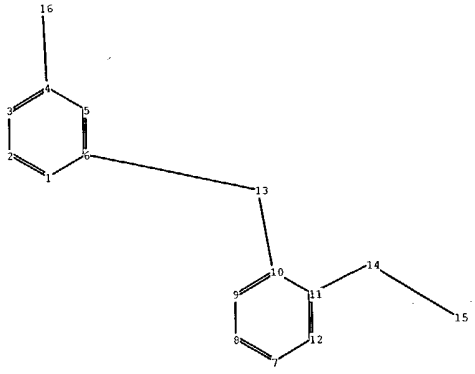
\stnweb\Queries\4a.str

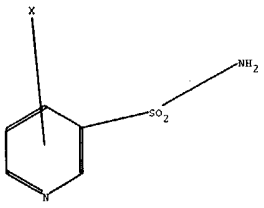


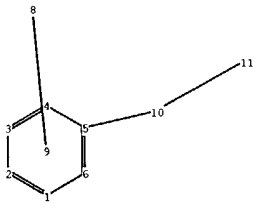


hain nodes :
13 14 15 16
ing nodes :
1 2 3 4 5 6 7 8 9 10 11 12
hain bonds :
4-16 6-13 10-13 11-14 14-15
ing bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12
xact/norm bonds :
4-16 6-13 10-13 14-15
xact bonds :
11-14
ormalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12
solated ring systems :
containing 1 : 7 :

atch level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
12:Atom 13:CLASS 14:CLASS 15:CLASS 16:CLASS

C:\stnweb\Queries\5a.str

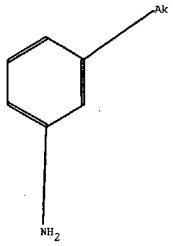


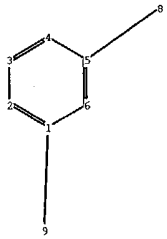


chain nodes :
8 10 11
ring nodes :
1 2 3 4 5 6
chain bonds :
5-10 10-11
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6
exact/norm bonds :
10-11
exact bonds :
5-10
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6
isolated ring systems :
containing 1 :

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS 11:CLASS

C:\stnweb\Queries\5b.str





chain nodes :
8 9
ring nodes :
1 2 3 4 5 6
chain bonds :
1-9 5-8
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6
exact/norm bonds :
1-9 5-8
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6
isolated ring systems :
containing 1 :

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS

```
* * * * * * * * * *   Welcome to STN International   * * * * * * * * * *

 NEWS  1            Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2            "Ask CAS" for self-help around the clock
 NEWS  3   May 12   EXTEND option available in structure searching
 NEWS  4   May 12   Polymer links for the POLYLINK command completed in REGISTRY
 NEWS  5   May 27   New UPM (Update Code Maximum) field for more efficient patent
                    SDIs in CAplus
 NEWS  6   May 27   CAplus super roles and document types searchable in REGISTRY
 NEWS  7   Jun 28   Additional enzyme-catalyzed reactions added to CASREACT
 NEWS  8   Jun 28   ANTE, AQUALINE, BIOENG, CIVILENG, ENVIROENG, MECHENG,
                    and WATER from CSA now available on STN(R)
 NEWS  9   Jul 12   BEILSTEIN enhanced with new display and select options,
                    resulting in a closer connection to BABS
 NEWS 10   Jul 30   BEILSTEIN on STN workshop to be held August 24 in conjunction
                    with the 228th ACS National Meeting
 NEWS 11   AUG 02   IFIPAT/IFIUDB/IFICDB reloaded with new search and display
                    fields
 NEWS 12   AUG 02   CAplus and CA patent records enhanced with European and Japan
                    Patent Office Classifications
 NEWS 13   AUG 02   STN User Update to be held August 22 in conjunction with the
                    228th ACS National Meeting
 NEWS 14   AUG 02   The Analysis Edition of STN Express with Discover!
                    (Version 7.01 for Windows) now available
 NEWS 15   AUG 04   Pricing for the Save Answers for SciFinder Wizard within
                    STN Express with Discover! will change September 1, 2004
 NEWS 16   AUG 27   BIOCOMMERCE: Changes and enhancements to content coverage
 NEWS 17   AUG 27   BIOTECHABS/BIOTECHDS: Two new display fields added for legal
                    status data from INPADOC
 NEWS 18   SEP 01   INPADOC: New family current-awareness alert (SDI) available
 NEWS 19   SEP 01   New pricing for the Save Answers for SciFinder Wizard within
                    STN Express with Discover!
 NEWS 20   SEP 01   New display format, HITSTR, available in WPIDS/WPINDEX/WPIX

 NEWS EXPRESS  JULY 30 CURRENT WINDOWS VERSION IS V7.01, CURRENT
               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 11 AUGUST 2004
 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
 NEWS INTER    General Internet Information
 NEWS LOGIN    Welcome Banner and News Items
 NEWS PHONE    Direct Dial and Telecommunication Network Access to STN
 NEWS WWW      CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that
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  * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 09:38:44 ON 07 SEP 2004

=> file reg
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21
```

h eb c g cg b cg eb

FILE 'REGISTRY' ENTERED AT 09:38:49 ON 07 SEP 2004
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STRUCTURE FILE UPDATES: 6 SEP 2004 HIGHEST RN 740796-45-6
DICTIONARY FILE UPDATES: 6 SEP 2004 HIGHEST RN 740796-45-6

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> file casreact
COST IN U.S. DOLLARS

	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	2.94	3.15

FILE 'CASREACT' ENTERED AT 09:43:04 ON 07 SEP 2004
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FILE CONTENT:1840 - 5 Sep 2004 VOL 141 ISS 10

****
*
* CASREACT now has more than 8 million reactions *
*
****

Some CASREACT records are derived from the ZIC/VINITI database (1974-1991) provided by InfoChem, INPI data prior to 1986, and Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=>
L1 STRUCTURE UPLOADED

=> d l1
L1 HAS NO ANSWERS
L1 STR

h eb c g cg b cg eb

```
=> s l1
SAMPLE SEARCH INITIATED 09:43:40 FILE 'CASREACT'
SCREENING COMPLETE -     198 REACTIONS TO VERIFY FROM       2 DOCUMENTS

100.0% DONE     198 VERIFIED        0 HIT RXNS                        0 DOCS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED VERIFICATIONS:       3116 TO     4804
PROJECTED ANSWERS:                0 TO        0

L2             0 SEA SSS SAM L1 (      0 REACTIONS)

=> s l1 full
THE ESTIMATED SEARCH COST FOR FILE 'CASREACT' IS 102.30 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N or END:y
FULL SEARCH INITIATED 09:43:47 FILE 'CASREACT'
SCREENING COMPLETE -     308 REACTIONS TO VERIFY FROM      12 DOCUMENTS

100.0% DONE     308 VERIFIED        0 HIT RXNS                        0 DOCS
SEARCH TIME: 00.00.01

L3             0 SEA SSS FUL L1 (      0 REACTIONS)

=>
L4       STRUCTURE UPLOADED

=> file reg
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY     SESSION
FULL ESTIMATED COST                                  104.40      107.55

FILE 'REGISTRY' ENTERED AT 09:46:10 ON 07 SEP 2004
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STRUCTURE FILE UPDATES:     6 SEP 2004  HIGHEST RN 740796-45-6
DICTIONARY FILE UPDATES:    6 SEP 2004  HIGHEST RN 740796-45-6

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

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Crossover limits have been increased.  See HELP CROSSOVER for details.

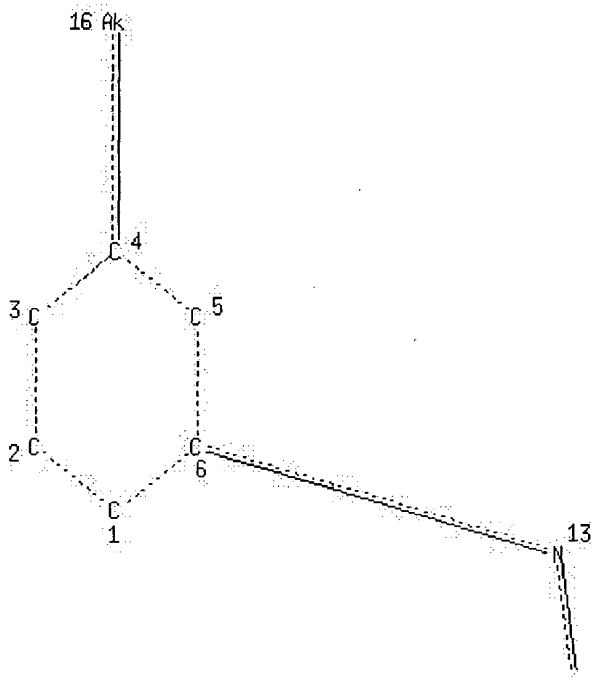
Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=>
L5       STRUCTURE UPLOADED

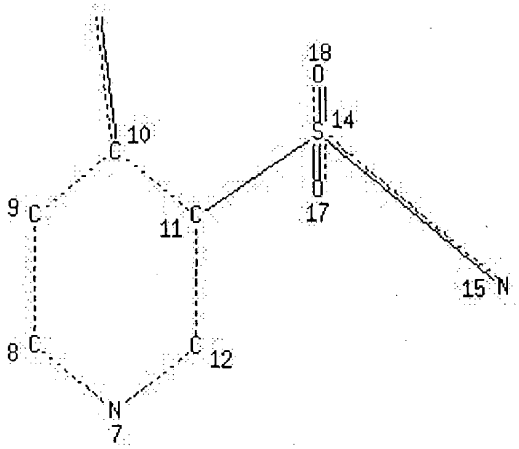
=> d l5
```

h eb c g cg b cg eb

L5 HAS NO ANSWERS
L5 STR



Page 1-A



Page 2-A
M2
Page 2-B
NODE ATTRIBUTES:

HCOUNT	IS M2	AT	15
NSPEC	IS R	AT	1
NSPEC	IS R	AT	2
NSPEC	IS R	AT	3
NSPEC	IS R	AT	4
NSPEC	IS R	AT	5
NSPEC	IS R	AT	6
NSPEC	IS R	AT	7
NSPEC	IS R	AT	8
NSPEC	IS R	AT	9
NSPEC	IS R	AT	10
NSPEC	IS R	AT	11
NSPEC	IS R	AT	12
NSPEC	IS C	AT	13

h eb c g cg b cg eb

```
NSPEC   IS C      AT  14
NSPEC   IS C      AT  15
NSPEC   IS C      AT  16
NSPEC   IS C      AT  17
NSPEC   IS C      AT  18
DEFAULT MLEVEL IS ATOM
MLEVEL  IS CLASS  AT  13 14 15 16 17 18
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS  18

STEREO ATTRIBUTES: NONE


=> s l5
SAMPLE SEARCH INITIATED 09:46:23 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -     28 TO ITERATE

100.0% PROCESSED      28 ITERATIONS                                0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:         243 TO      877
PROJECTED ANSWERS:              0 TO        0

L6             0 SEA SSS SAM L5

=> s l5 full
THE ESTIMATED SEARCH COST FOR FILE 'REGISTRY' IS 155.00 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N or END:y
FULL SEARCH INITIATED 09:46:27 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -     538 TO ITERATE

100.0% PROCESSED     538 ITERATIONS                                8 ANSWERS
SEARCH TIME: 00.00.01

L7             8 SEA SSS FUL L5

=> file hcaplus
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                 ENTRY    SESSION
FULL ESTIMATED COST                             155.42     262.97

FILE 'HCAPLUS' ENTERED AT 09:46:31 ON 07 SEP 2004
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```

h eb c g cg b cg eb

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FILE COVERS 1907 - 7 Sep 2004 VOL 141 ISS 11
FILE LAST UPDATED: 6 Sep 2004 (20040906/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l7/prep
23 L7
3192603 PREP/RL
L8 12 L7/PREP
(L7 (L) PREP/RL)

=> file reg

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	2.36	265.33

FILE 'REGISTRY' ENTERED AT 09:46:37 ON 07 SEP 2004
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STRUCTURE FILE UPDATES: 6 SEP 2004 HIGHEST RN 740796-45-6
DICTIONARY FILE UPDATES: 6 SEP 2004 HIGHEST RN 740796-45-6

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

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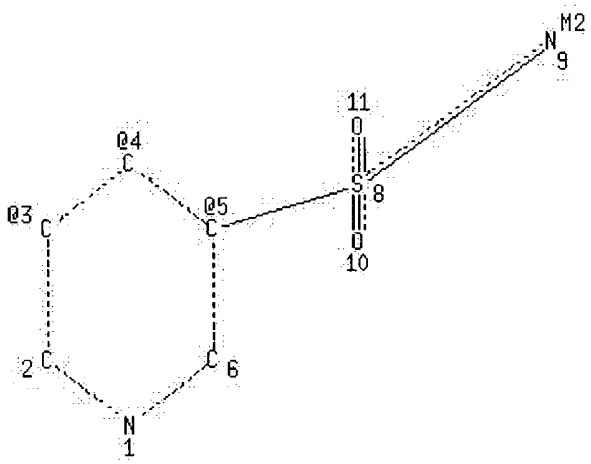
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=>
L9 STRUCTURE UPLOADED

=> d l9
L9 HAS NO ANSWERS
L9 STR

X @7



VPA 7-3/4/5 S
NODE ATTRIBUTES:
HCOUNT IS M2 AT 9
NSPEC IS R AT 1
NSPEC IS R AT 2
NSPEC IS R AT 3
NSPEC IS R AT 4
NSPEC IS R AT 5
NSPEC IS R AT 6
NSPEC IS C AT 7
NSPEC IS C AT 8
NSPEC IS C AT 9
NSPEC IS C AT 10
NSPEC IS C AT 11
DEFAULT MLEVEL IS ATOM
MLEVEL IS CLASS AT 7 8 9 10 11
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

=> s l9
SAMPLE SEARCH INITIATED 09:48:36 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 349 TO ITERATE

100.0% PROCESSED 349 ITERATIONS 1 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 5860 TO 8100
PROJECTED ANSWERS: 1 TO 80

L10 1 SEA SSS SAM L9

=> s l9 full

h eb c g cg b cg eb

```
THE ESTIMATED SEARCH COST FOR FILE 'REGISTRY' IS 155.00 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N or END:y
FULL SEARCH INITIATED 09:48:40 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -   7048 TO ITERATE

100.0% PROCESSED    7048 ITERATIONS                          22 ANSWERS
SEARCH TIME: 00.00.01

L11          22 SEA SSS FUL L9

=> file hcaplus
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                              156.26     421.59

FILE 'HCAPLUS' ENTERED AT 09:48:42 ON 07 SEP 2004
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FILE COVERS 1907 - 7 Sep 2004  VOL 141 ISS 11
FILE LAST UPDATED: 6 Sep 2004  (20040906/ED)

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 substance identification.


=> s l11/rct
            42 L11
       2654685 RCT/RL
L12         27 L11/RCT
                (L11 (L) RCT/RL)

=> d his

     (FILE 'HOME' ENTERED AT 09:38:44 ON 07 SEP 2004)

     FILE 'REGISTRY' ENTERED AT 09:38:49 ON 07 SEP 2004

     FILE 'CASREACT' ENTERED AT 09:43:04 ON 07 SEP 2004
L1              STRUCTURE UPLOADED
L2            0 S L1
L3            0 S L1 FULL
L4              STRUCTURE UPLOADED

     FILE 'REGISTRY' ENTERED AT 09:46:10 ON 07 SEP 2004
L5              STRUCTURE UPLOADED
L6            0 S L5
L7            8 S L5 FULL
```

h eb c g cg b cg eb

```
     FILE 'HCAPLUS' ENTERED AT 09:46:31 ON 07 SEP 2004
L8           12 S L7/PREP

     FILE 'REGISTRY' ENTERED AT 09:46:37 ON 07 SEP 2004
L9               STRUCTURE UPLOADED
L10           1 S L9
L11          22 S L9 FULL

     FILE 'HCAPLUS' ENTERED AT 09:48:42 ON 07 SEP 2004
L12          27 S L11/RCT

=> s l12 and l8
L13          9 L12 AND L8

=> file reg
COST IN U.S. DOLLARS                            SINCE FILE      TOTAL
                                                     ENTRY    SESSION
FULL ESTIMATED COST                                   2.36     423.95

FILE 'REGISTRY' ENTERED AT 09:48:56 ON 07 SEP 2004
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STRUCTURE FILE UPDATES:    6 SEP 2004  HIGHEST RN 740796-45-6
DICTIONARY FILE UPDATES:   6 SEP 2004  HIGHEST RN 740796-45-6

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

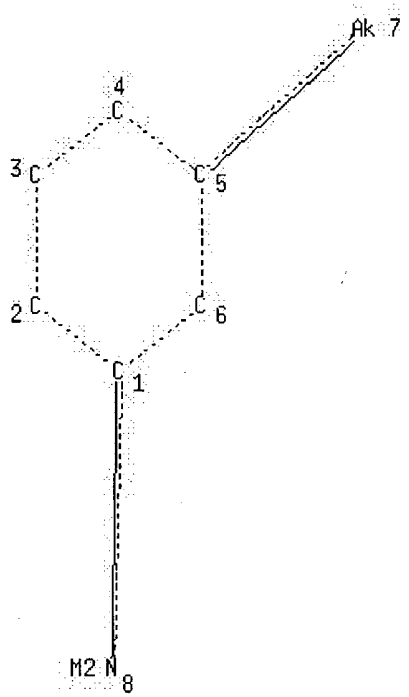
  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=>
L14     STRUCTURE UPLOADED

=> d l14
L14 HAS NO ANSWERS
L14              STR
```




```
NODE ATTRIBUTES:
HCOUNT  IS M2     AT   8
NSPEC   IS R      AT   1
NSPEC   IS R      AT   2
NSPEC   IS R      AT   3
NSPEC   IS R      AT   4
NSPEC   IS R      AT   5
NSPEC   IS R      AT   6
NSPEC   IS C      AT   7
NSPEC   IS C      AT   8
DEFAULT MLEVEL IS ATOM
MLEVEL  IS CLASS  AT   7  8
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS   8

STEREO ATTRIBUTES: NONE


=> s l14
SAMPLE SEARCH INITIATED 09:50:25 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 286466 TO ITERATE

  0.3% PROCESSED    1000 ITERATIONS                          8 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **INCOMPLETE**
                        BATCH   **INCOMPLETE**
PROJECTED ITERATIONS:      EXCEEDS 1000000
PROJECTED ANSWERS:         EXCEEDS   42963

L15           8 SEA SSS SAM L14

=> e m-toluidine/cn
```

h ebc gcgb cg eb

```
E1            1     M-TOLUIC-.ALPHA.,.ALPHA.,.ALPHA.-D3 ACID, 2-NITRO-/CN
E2            1     M-TOLUIC-CARBOXY-14C ACID/CN
E3            1 --> M-TOLUIDINE/CN
E4            1     M-TOLUIDINE .OMEGA.-METHANESULFONATE/CN
E5            1     M-TOLUIDINE 1:1 COMPLEX WITH IODINE/CN
E6            1     M-TOLUIDINE COMPLEX WITH P-BENZOQUINONE (1:1)/CN
E7            1     M-TOLUIDINE COMPOUND WITH S-TRINITROBENZENE (1:1)/CN
E8            1     M-TOLUIDINE HOMOPOLYMER/CN
E9            1     M-TOLUIDINE NITRATE/CN
E10           1     M-TOLUIDINE, ((2-CHLORO-4-(METHYLSULFONYL)PHENYL)AZO)-N,N-DI
                    METHYL-/CN
E11           1     M-TOLUIDINE, (2,4-THIOPHENEDIYLBIS(AZO))DI-/CN
E12           1     M-TOLUIDINE, .ALPHA.,.ALPHA.,.ALPHA.,-TRIFLUORO-6-((O-NITROP
                    HENYL)THIO)-/CN

=> s e3
L16           1 M-TOLUIDINE/CN

=> file hcaplus
COST IN U.S. DOLLARS                                  SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       5.69     429.64

FILE 'HCAPLUS' ENTERED AT 09:50:42 ON 07 SEP 2004
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FILE COVERS 1907 - 7 Sep 2004  VOL 141 ISS 11
FILE LAST UPDATED: 6 Sep 2004  (20040906/ED)

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


=> s l16
L17        4779 L16

=> d his

     (FILE 'HOME' ENTERED AT 09:38:44 ON 07 SEP 2004)

     FILE 'REGISTRY' ENTERED AT 09:38:49 ON 07 SEP 2004

     FILE 'CASREACT' ENTERED AT 09:43:04 ON 07 SEP 2004
L1              STRUCTURE UPLOADED
L2            0 S L1
L3            0 S L1 FULL
L4              STRUCTURE UPLOADED
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h eb c g cg b cg eb

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     FILE 'REGISTRY' ENTERED AT 09:46:10 ON 07 SEP 2004
L5                STRUCTURE UPLOADED
L6              0 S L5
L7              8 S L5 FULL

     FILE 'HCAPLUS' ENTERED AT 09:46:31 ON 07 SEP 2004
L8             12 S L7/PREP

     FILE 'REGISTRY' ENTERED AT 09:46:37 ON 07 SEP 2004
L9                STRUCTURE UPLOADED
L10             1 S L9
L11            22 S L9 FULL

     FILE 'HCAPLUS' ENTERED AT 09:48:42 ON 07 SEP 2004
L12            27 S L11/RCT
L13             9 S L12 AND L8

     FILE 'REGISTRY' ENTERED AT 09:48:56 ON 07 SEP 2004
L14               STRUCTURE UPLOADED
L15             8 S L14
                E M-TOLUIDINE/CN
L16             1 S E3

     FILE 'HCAPLUS' ENTERED AT 09:50:42 ON 07 SEP 2004
L17          4779 S L16

=> s l17 and l13
L18             5 L17 AND L13

=> d l18, ibib abs hitstr, 1-5

L18  ANSWER 1 OF 5  HCAPLUS  COPYRIGHT 2004 ACS on STN
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Full Text | More References

ACCESSION NUMBER: 2003:931332 HCAPLUS
DOCUMENT NUMBER: 139:395829
TITLE: Process for the preparation of highly pure torsemide
INVENTOR(S): Gutman, Arie; Etinger, Marina; Goldring, Dmitry; Pertsikov, Boris; Yudovitch, Lev; Tishin, Boris; Vilensky, Alexander; Glozman, Alexander; Nisnevich, Gennady
PATENT ASSIGNEE(S): Finetech Laboratories Ltd., Israel
SOURCE: PCT Int. Appl., 63 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003097603	A1	20031127	WO 2003-IL311	20030415

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

h eb c g cg b cg eb

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: IL 2002-149771 A 20020521

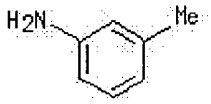
OTHER SOURCE(S): CASREACT 139:395829

AB The present invention provides a novel process for the prepn. of highly pure torsemide by reacting of 4-m-tolylamino-3-pyridinesulfonamide with Ph isopropylcarbamate in the presence of lithium base. The present invention also provides a novel intermediate - torsemide lithium, also in hydrate or solvate form - which is a stable, solid compd., and may be simply isolated from the reaction mixt. to give after acidification practically pure torsemide without further purifn. steps.

IT **108-44-1**, m-Toluidine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(in prepn. of highly pure torsemide)

RN 108-44-1 HCAPLUS

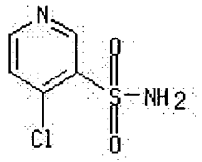
CN Benzenamine, 3-methyl- (9CI) (CA INDEX NAME)



IT **33263-43-3P**, 4-Chloro-3-pyridinesulfonamide **72811-73-5P** **160822-47-9P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(in prepn. of highly pure torsemide)

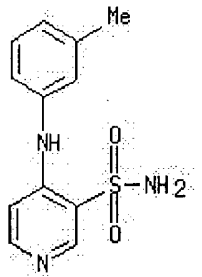
RN 33263-43-3 HCAPLUS

CN 3-Pyridinesulfonamide, 4-chloro- (8CI, 9CI) (CA INDEX NAME)



RN 72811-73-5 HCAPLUS

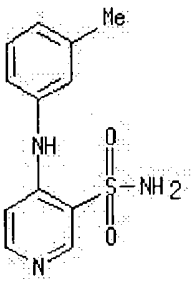
CN 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]- (9CI) (CA INDEX NAME)



RN 160822-47-9 HCAPLUS

CN 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]-, monohydrochloride (9CI) (CA INDEX NAME)

h eb c g cg b cg eb



HCl

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

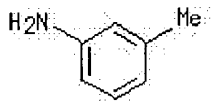
Full Text | Citing References

ACCESSION NUMBER: 2003:311134 HCAPLUS
DOCUMENT NUMBER: 139:197336
TITLE: Synthesis of a new, curative and effective medicine for hypertension and diuretic torasemide
AUTHOR(S): Xiong, Zhenhu; Fei, Xuening
CORPORATE SOURCE: Tianjin Institute of Urban Construction, Tianjin, 300384, Peop. Rep. China
SOURCE: Zhongguo Yaowu Huaxue Zazhi (2002), 12(4), 219-221, 224
CODEN: ZYHZEF; ISSN: 1005-0108
PUBLISHER: Zhongguo Yaowu Huaxue Zazhi Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
OTHER SOURCE(S): CASREACT 139:197336

AB Torasemide was prepd. in 5 steps with high yield from 4-hydroxypyridine by sulfonation, chlorination, amidation, substitution with 3-methylaniline, and condensation with iso-Pr isocyanate.

IT **108-44-1**, m-Toluidine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of torasemide)

RN 108-44-1 HCAPLUS
CN Benzenamine, 3-methyl- (9CI) (CA INDEX NAME)



IT **33263-43-3P**, 4-Chloropyridine-3-sulfonamide **72811-73-5P**, 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]-
RL: **RCT (Reactant)**; SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(synthesis of torasemide)

RN 33263-43-3 HCAPLUS
CN 3-Pyridinesulfonamide, 4-chloro- (8CI, 9CI) (CA INDEX NAME)

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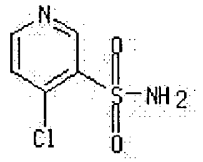
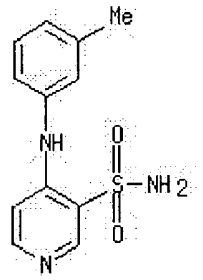


RN 72811-73-5 HCAPLUS
CN 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]- (9CI) (CA INDEX NAME)



L18 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

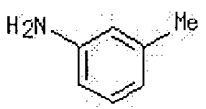
Full Text | Citing References

ACCESSION NUMBER: 1995:301468 HCAPLUS
DOCUMENT NUMBER: 122:105616
TITLE: Chemical structure and physico-chemical properties of torasemide
AUTHOR(S): Kondo, Nobuo; Kimura, Masazo; Yamamoto, Madoka; Hashimoto, Hirotaka; Kawamata, Ken-ichiro; Kawano, Kensuke; Schmidt, Heinrich
CORPORATE SOURCE: New Product Res. Laboratories, Green Cross Corp., Hirakata, 573, Japan
SOURCE: Iyakuhin Kenkyu (1994), 25(9), 734-50
CODEN: IYKEDH; ISSN: 0287-0894
PUBLISHER: Nippon Koteisho Kyokai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB The chem. structure of torasemide, a diuretic agent, was confirmed on the basis of elemental anal., UV, IR, NMR and mass spectra. The physico-chem. properties were clarified by studying the appearance, soly., hygroscopicity, photo-stability, m.p., thermal anal., pH of aq. soln., dissocn. const., partition coeff., polymorphism, specific optical rotation and impurities. Investigations into the stability of torasemide under severe conditions were also conducted to define the degradative pathway for the compd.

IT **108-44-1**, reactions **33263-43-3**, 4-Chloropyridine-3-sulfonamide
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(synthesis and physico-chem. properties of torasemide)

RN 108-44-1 HCAPLUS
CN Benzenamine, 3-methyl- (9CI) (CA INDEX NAME)



RN 33263-43-3 HCAPLUS
CN 3-Pyridinesulfonamide, 4-chloro- (8CI, 9CI) (CA INDEX NAME)

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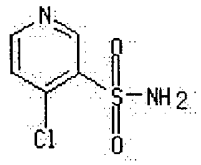
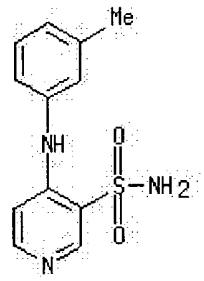
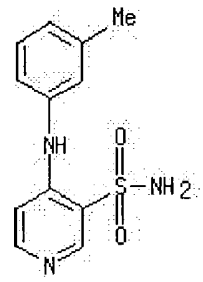


IT 72811-73-5P 160822-47-9P
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(synthesis and physico-chem. properties of torasemide)
RN 72811-73-5 HCAPLUS
CN 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]- (9CI) (CA INDEX NAME)



RN 160822-47-9 HCAPLUS
CN 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]-, monohydrochloride (9CI) (CA INDEX NAME)



HCl

L18 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

Full Text | Citing References

ACCESSION NUMBER:	1988:160942 HCAPLUS
DOCUMENT NUMBER:	108:160942
TITLE:	Chemistry and pharmacological properties of the pyridine-3-sulfonylurea derivative torasemide
AUTHOR(S):	Delarge, J.
CORPORATE SOURCE:	Inst. Pharm., State Univ. Liege, Liege, B-4000, Belg.
SOURCE:	Arzneimittel-Forschung (1988), 38(1A), 144-50 CODEN: ARZNAD; ISSN: 0004-4172
DOCUMENT TYPE:	Journal
LANGUAGE:	English
OTHER SOURCE(S):	CASREACT 108:160942

GI

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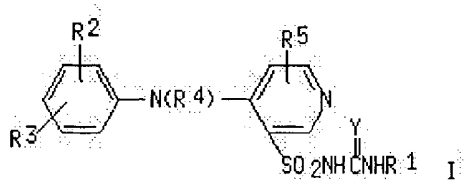
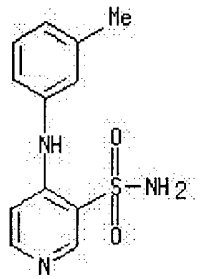


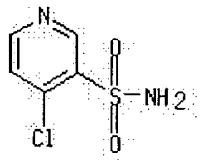
I

AB Out of a series of pyridine-3-sulfonylureas (I; R1 = Me, Et, Pr, etc.; R2 = 3-CF3, 3-NO2, 3-MeO, 3-Me, 3-Et, 2-, 3-, 4-Cl, etc.; R3 = H or 4-, 5-Cl; R4 = R5 = H or Me; Y = O or S) with diuretic activity torasemide (I; R1 = i-Pr, R2 = 3-Me, R3 = R4 = R5 = H, Y = O), which was prepd., proved to be one of the most active derivs. In the rat, urinary vol. and electrolyte excretions increased linearly with the logarithm of the dose, thus resembling the profile of a high ceiling diuretic. Torasemide was equally potent both by oral and parenteral administration. Compared to furosemide, torasemide was 9-40 times more potent on wt. basis in the rat. For the same natriuretic effect, however, K+ losses with torasemide were less than with furosemide. The diuretic effect of torasemide lasted longer than that of furosemide. The plasma elimination half-life of torasemide was ~1.5 h in the rat and bioavailability was nearly complete. Torasemide was 98-99% bound to plasma proteins. No in vitro interaction was found with the coumarin deriv. warfarin.

IT **72811-73-5P**, 3-Sulfonamido-4-(3-methylanilino)pyridine
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(prepn. and reaction with isopropylcyanate)
RN 72811-73-5 HCAPLUS
CN 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]- (9CI) (CA INDEX NAME)



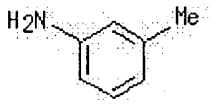
IT **33263-43-3P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction with toluidine or isopropylcyanate)
RN 33263-43-3 HCAPLUS
CN 3-Pyridinesulfonamide, 4-chloro- (8CI, 9CI) (CA INDEX NAME)



IT **108-44-1**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chloropyridinesulfonamide or isopropylchloropyridylsulfonylurea)
RN 108-44-1 HCAPLUS

h eb c g cg b cg eb

CN Benzenamine, 3-methyl- (9CI) (CA INDEX NAME)



L18 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

Full Text | Cited References

ACCESSION NUMBER: 1976:59218 HCAPLUS
DOCUMENT NUMBER: 84:59218
TITLE: Pyridine derivatives
INVENTOR(S): Delarge, Jacques E.; Lapiere, Charles L.; Georges, Andre H.
PATENT ASSIGNEE(S): Christiaens, A., S. A., Belg.
SOURCE: Ger. Offen., 39 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2516025	A1	19751106	DE 1975-2516025	19750412
DE 2516025	C2	19881103		
ZA 7502243	A	19760331	ZA 1975-2243	19750408
BE 827844	A1	19751013	BE 1975-155330	19750411
ES 436581	A1	19770401	ES 1975-436581	19750414
IL 47084	A1	19790131	IL 1975-47084	19750414
SE 7504409	A	19751020	SE 1975-4409	19750416
SE 424320	B	19820712		
SE 424320	C	19821021		
NL 7504521	A	19751021	NL 1975-4521	19750416
NL 183580	B	19880701		
NL 183580	C	19881201		
FR 2267775	A1	19751114	FR 1975-11791	19750416
FR 2267775	B1	19781110		
US 4018929	A	19770419	US 1975-568759	19750416
AT 7502882	A	19771115	AT 1975-2882	19750416
AT 345832	B	19781010	AT 1977-1898	19750416
CH 609045	A	19790215	CH 1975-4857	19750416
CH 610890	A	19790515	CH 1978-2163	19750416
CH 612424	A	19790731	CH 1978-2164	19750416
CA 1070313	A1	19800122	CA 1975-224805	19750416
JP 50142571	A2	19751117	JP 1975-47371	19750417
JP 59051536	B4	19841214		
DD 121936	C	19760905	DD 1975-185508	19750417
DD 126887	C	19770817	DD 1975-194800	19750417
US 4042693	A	19770816	US 1976-694422	19760609
US 4055650	A	19771025	US 1976-694421	19760609
ES 453328	A1	19771101	ES 1976-453328	19761115
ES 453327	A1	19771116	ES 1976-453327	19761115
ES 453329	A1	19771116	ES 1976-453329	19761115
AT 7701899	A	19771115	AT 1977-1899	19770318
AT 7701897	A	19771115	AT 1977-1897	19770318
SE 7907618	A	19790913	SE 1979-7618	19790913
US 30633	E	19810602	US 1980-119601	19800207

h eb c g cg b cg eb

PRIORITY APPLN. INFO.:

GB 1974-16836	19740417
GB 1975-16836	19750414
AT 1975-2882	19750416
US 1975-568759	19750416
US 1979-31101	19790418

GI For diagram(s), see printed CA Issue.

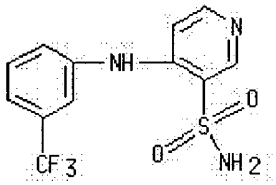
AB Pyridinesulfonamides I [R = C6H4R3 (R3 = Cl, F3C, Me, MeO, H, Br, F, NO2, Et, NH2), Et, iso-Pr, 4-methylfuryl, C6H3Cl2, C6H3(CF3)Cl; R1 = alkylcarbamoyl, cyclohexylcarbamoyl, CSNHCH2CH:CH2, CONHPh, CONHC6H4Cl-p, alkylthiocarbamoyl, H, COEt; R2 = H, Me; X = NH, NMe, O, S, NEt; n = 0, 1], useful as inflammation inhibitors and diuretics, were prepd. by various methods, e.g., treatment of I (R1 = H) with an isocyanate or isothiocyanate. Reaction of I (R1 = H) with an alkyl haloformate, then with an amine, gave I (R1 = substituted carbamoyl). II reacted with amines R5NHR to give I (X = NH, NMe, NEt). II was treated with NaXR (R = substituted phenyl, X = O, S) to give the corresponding I. To prep. I (R1 = acyl) or pyridothiadiazole III, I (R1 = H) was reacted with EtCOCl, (EtCO)2O, or BzCl. Treatment of I (R = alkylthiocarbamoyl) with aq. alc. Na2CO3 and HgO gave I (R1 = alkylcarbamoyl). Oxidn. of I (n = 0) gave I (n = 1). I caused 1.6-92.0% inhibition of carrageenan-induced edema in rats [best results by I (R = 3,4-Cl2C6H3, R1 = CONHCHMe2, X = NH, R2 = H, n = 0] and caused 3.6-106.4 mg/kg increase in urine of rats [best results by I (R = 3-F3CC6H4, R1 = CONHEt, X = NH, R2 = H, n = 1)].

IT **38030-43-2P**

RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(prepn. and reactions of)

RN 38030-43-2 HCAPLUS

CN 3-Pyridinesulfonamide, 4-[[3-(trifluoromethyl)phenyl]amino]- (9CI) (CA INDEX NAME)

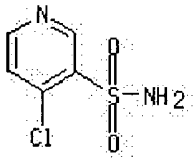


IT **33263-43-3**

RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(reaction of, with chlorophenol)

RN 33263-43-3 HCAPLUS

CN 3-Pyridinesulfonamide, 4-chloro- (8CI, 9CI) (CA INDEX NAME)



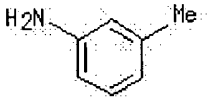
IT **108-44-1**

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chloropyridinesulfonamide oxide)

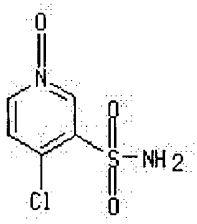
RN 108-44-1 HCAPLUS

CN Benzenamine, 3-methyl- (9CI) (CA INDEX NAME)

h eb c g cg b cg eb



IT **58155-57-0**
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(reaction of, with toluidine)
RN 58155-57-0 HCAPLUS
CN 3-Pyridinesulfonamide, 4-chloro-, 1-oxide (9CI) (CA INDEX NAME)



=> d his

(FILE 'HOME' ENTERED AT 09:38:44 ON 07 SEP 2004)

FILE 'REGISTRY' ENTERED AT 09:38:49 ON 07 SEP 2004

FILE 'CASREACT' ENTERED AT 09:43:04 ON 07 SEP 2004
L1 STRUCTURE UPLOADED
L2 0 S L1
L3 0 S L1 FULL
L4 STRUCTURE UPLOADED

FILE 'REGISTRY' ENTERED AT 09:46:10 ON 07 SEP 2004
L5 STRUCTURE UPLOADED
L6 0 S L5
L7 8 S L5 FULL

FILE 'HCAPLUS' ENTERED AT 09:46:31 ON 07 SEP 2004
L8 12 S L7/PREP

FILE 'REGISTRY' ENTERED AT 09:46:37 ON 07 SEP 2004
L9 STRUCTURE UPLOADED
L10 1 S L9
L11 22 S L9 FULL

FILE 'HCAPLUS' ENTERED AT 09:48:42 ON 07 SEP 2004
L12 27 S L11/RCT
L13 9 S L12 AND L8

FILE 'REGISTRY' ENTERED AT 09:48:56 ON 07 SEP 2004
L14 STRUCTURE UPLOADED
L15 8 S L14
E M-TOLUIDINE/CN
L16 1 S E3

FILE 'HCAPLUS' ENTERED AT 09:50:42 ON 07 SEP 2004
L17 4779 S L16
L18 5 S L17 AND L13

=> s l18 and che, d?/au

h eb c g cg b cg eb

```
            159 CHE, D?/AU
L19           0 L18 AND CHE, D?/AU

=> s l18 and guntoori, b?/au
              5 GUNTOORI, B?/AU
L20           0 L18 AND GUNTOORI, B?/AU

=> s l18 and duncan, s?/au
            244 DUNCAN, S?/AU
L21           0 L18 AND DUNCAN, S?/AU

=>
```

h eb c g cg b cg eb

```
* * * * * * * * * *   Welcome to STN International   * * * * * * * * * *

 NEWS  1            Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2            "Ask CAS" for self-help around the clock
 NEWS  3  May 12    EXTEND option available in structure searching
 NEWS  4  May 12    Polymer links for the POLYLINK command completed in REGISTRY
 NEWS  5  May 27    New UPM (Update Code Maximum) field for more efficient patent
                    SDIs in CAplus
 NEWS  6  May 27    CAplus super roles and document types searchable in REGISTRY
 NEWS  7  Jun 28    Additional enzyme-catalyzed reactions added to CASREACT
 NEWS  8  Jun 28    ANTE, AQUALINE, BIOENG, CIVILENG, ENVIROENG, MECHENG,
                    and WATER from CSA now available on STN(R)
 NEWS  9  Jul 12    BEILSTEIN enhanced with new display and select options,
                    resulting in a closer connection to BABS
 NEWS 10  Jul 30    BEILSTEIN on STN workshop to be held August 24 in conjunction
                    with the 228th ACS National Meeting
 NEWS 11  AUG 02    IFIPAT/IFIUDB/IFICDB reloaded with new search and display
                    fields
 NEWS 12  AUG 02    CAplus and CA patent records enhanced with European and Japan
                    Patent Office Classifications
 NEWS 13  AUG 02    STN User Update to be held August 22 in conjunction with the
                    228th ACS National Meeting
 NEWS 14  AUG 02    The Analysis Edition of STN Express with Discover!
                    (Version 7.01 for Windows) now available
 NEWS 15  AUG 04    Pricing for the Save Answers for SciFinder Wizard within
                    STN Express with Discover! will change September 1, 2004
 NEWS 16  AUG 27    BIOCOMMERCE: Changes and enhancements to content coverage
 NEWS 17  AUG 27    BIOTECHABS/BIOTECHDS: Two new display fields added for legal
                    status data from INPADOC
 NEWS 18  SEP 01    INPADOC: New family current-awareness alert (SDI) available
 NEWS 19  SEP 01    New pricing for the Save Answers for SciFinder Wizard within
                    STN Express with Discover!
 NEWS 20  SEP 01    New display format, HITSTR, available in WPIDS/WPINDEX/WPIX

 NEWS EXPRESS  JULY 30 CURRENT WINDOWS VERSION IS V7.01, CURRENT
               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 11 AUGUST 2004
 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
 NEWS INTER    General Internet Information
 NEWS LOGIN    Welcome Banner and News Items
 NEWS PHONE    Direct Dial and Telecommunication Network Access to STN
 NEWS WWW      CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that
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  * * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 09:38:44 ON 07 SEP 2004

=> file reg
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21
```

h ebc gcg b cg eb

```
FILE 'REGISTRY' ENTERED AT 09:38:49 ON 07 SEP 2004
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STRUCTURE FILE UPDATES:    6 SEP 2004  HIGHEST RN 740796-45-6
DICTIONARY FILE UPDATES:   6 SEP 2004  HIGHEST RN 740796-45-6

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

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Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> file casreact
COST IN U.S. DOLLARS                            SINCE FILE      TOTAL
                                                     ENTRY    SESSION
FULL ESTIMATED COST                                   2.94       3.15

FILE 'CASREACT' ENTERED AT 09:43:04 ON 07 SEP 2004
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FILE CONTENT:1840 - 5 Sep 2004 VOL 141 ISS 10

************************************************************
*                                                          *
*     CASREACT now has more than  8 million reactions      *
*                                                          *
************************************************************

Some CASREACT records are derived from the ZIC/VINITI database (1974-1991)
provided by InfoChem, INPI data prior to 1986, and Biotransformations
database compiled under the direction of Professor Dr. Klaus Kieslich.

This file contains CAS Registry Numbers for easy and accurate substance
identification.

=>
L1       STRUCTURE UPLOADED

=> d l1
L1 HAS NO ANSWERS
L1              STR
```

h eb c g cg b cg eb

```
=> s l1
SAMPLE SEARCH INITIATED 09:43:40 FILE 'CASREACT'
SCREENING COMPLETE -     198 REACTIONS TO VERIFY FROM      2 DOCUMENTS

100.0% DONE     198 VERIFIED       0 HIT RXNS                      0 DOCS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED VERIFICATIONS:      3116 TO     4804
PROJECTED ANSWERS:               0 TO        0

L2             0 SEA SSS SAM L1 (      0 REACTIONS)

=> s l1 full
THE ESTIMATED SEARCH COST FOR FILE 'CASREACT' IS 102.30 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N or END:y
FULL SEARCH INITIATED 09:43:47 FILE 'CASREACT'
SCREENING COMPLETE -     308 REACTIONS TO VERIFY FROM     12 DOCUMENTS

100.0% DONE     308 VERIFIED       0 HIT RXNS                      0 DOCS
SEARCH TIME: 00.00.01

L3             0 SEA SSS FUL L1 (      0 REACTIONS)

=>
L4       STRUCTURE UPLOADED

=> file reg
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   104.40     107.55

FILE 'REGISTRY' ENTERED AT 09:46:10 ON 07 SEP 2004
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STRUCTURE FILE UPDATES:     6 SEP 2004  HIGHEST RN 740796-45-6
DICTIONARY FILE UPDATES:    6 SEP 2004  HIGHEST RN 740796-45-6

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

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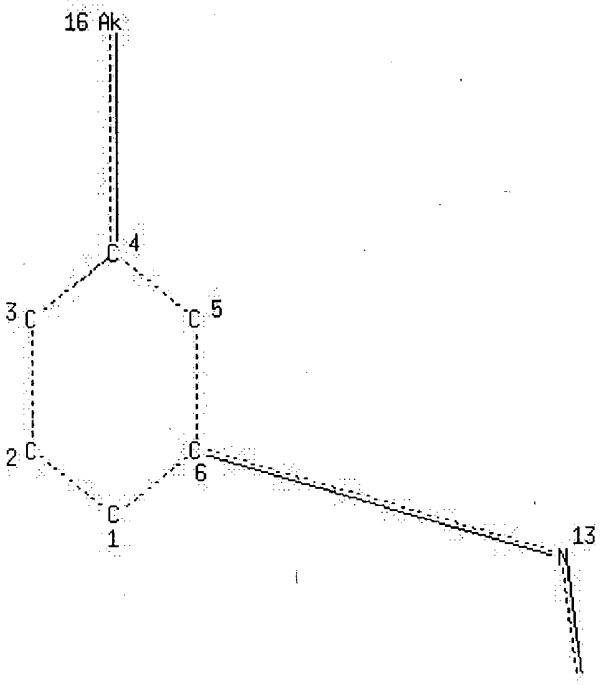
Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=>
L5       STRUCTURE UPLOADED

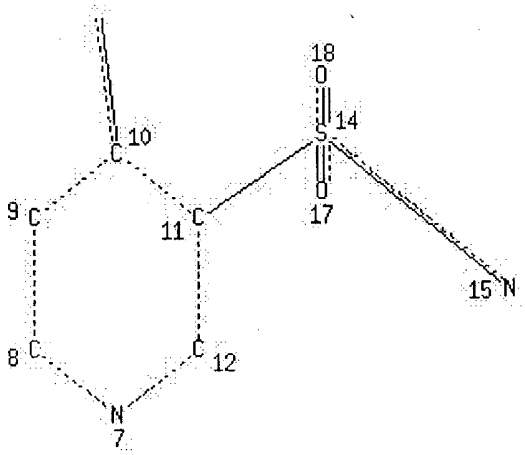
=> d l5
```

h eb c g cg b cg eb

L5 HAS NO ANSWERS
L5 STR



Page 1-A



Page 2-A

M2

Page 2-B

NODE ATTRIBUTES:

HCOUNT	IS M2	AT	15
NSPEC	IS R	AT	1
NSPEC	IS R	AT	2
NSPEC	IS R	AT	3
NSPEC	IS R	AT	4
NSPEC	IS R	AT	5
NSPEC	IS R	AT	6
NSPEC	IS R	AT	7
NSPEC	IS R	AT	8
NSPEC	IS R	AT	9
NSPEC	IS R	AT	10
NSPEC	IS R	AT	11
NSPEC	IS R	AT	12
NSPEC	IS C	AT	13

h eb c g cg b cg eb

```
NSPEC   IS C      AT  14
NSPEC   IS C      AT  15
NSPEC   IS C      AT  16
NSPEC   IS C      AT  17
NSPEC   IS C      AT  18
DEFAULT MLEVEL IS ATOM
MLEVEL  IS CLASS  AT  13 14 15 16 17 18
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS  18

STEREO ATTRIBUTES: NONE


=> s l5
SAMPLE SEARCH INITIATED 09:46:23 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -     28 TO ITERATE

100.0% PROCESSED      28 ITERATIONS                              0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:          243 TO      877
PROJECTED ANSWERS:               0 TO        0

L6            0 SEA SSS SAM L5

=> s l5 full
THE ESTIMATED SEARCH COST FOR FILE 'REGISTRY' IS 155.00 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N or END:y
FULL SEARCH INITIATED 09:46:27 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -    538 TO ITERATE

100.0% PROCESSED     538 ITERATIONS                              8 ANSWERS
SEARCH TIME: 00.00.01

L7            8 SEA SSS FUL L5

=> file hcaplus
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                               155.42     262.97

FILE 'HCAPLUS' ENTERED AT 09:46:31 ON 07 SEP 2004
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```

h eb c g cg b cg eb

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FILE COVERS 1907 - 7 Sep 2004 VOL 141 ISS 11
FILE LAST UPDATED: 6 Sep 2004 (20040906/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l7/prep
23 L7
3192603 PREP/RL
L8 12 L7/PREP
(L7 (L) PREP/RL)

=> file reg
COST IN U.S. DOLLARS SINCE FILE ENTRY TOTAL SESSION
FULL ESTIMATED COST 2.36 265.33

FILE 'REGISTRY' ENTERED AT 09:46:37 ON 07 SEP 2004
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STRUCTURE FILE UPDATES: 6 SEP 2004 HIGHEST RN 740796-45-6
DICTIONARY FILE UPDATES: 6 SEP 2004 HIGHEST RN 740796-45-6

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

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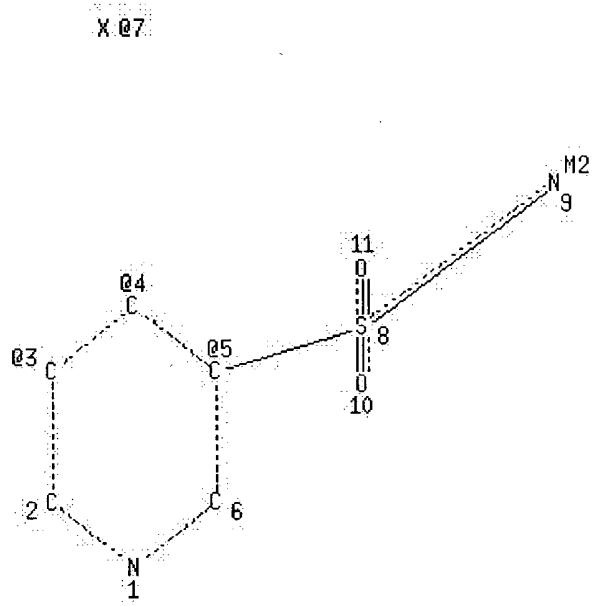
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=>
L9 STRUCTURE UPLOADED

=> d l9
L9 HAS NO ANSWERS
L9 STR



VPA 7-3/4/5 S
NODE ATTRIBUTES:
HCOUNT IS M2 AT 9
NSPEC IS R AT 1
NSPEC IS R AT 2
NSPEC IS R AT 3
NSPEC IS R AT 4
NSPEC IS R AT 5
NSPEC IS R AT 6
NSPEC IS C AT 7
NSPEC IS C AT 8
NSPEC IS C AT 9
NSPEC IS C AT 10
NSPEC IS C AT 11
DEFAULT MLEVEL IS ATOM
MLEVEL IS CLASS AT 7 8 9 10 11
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

=> s l9
SAMPLE SEARCH INITIATED 09:48:36 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 349 TO ITERATE

100.0% PROCESSED 349 ITERATIONS 1 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 5860 TO 8100
PROJECTED ANSWERS: 1 TO 80

L10 1 SEA SSS SAM L9

=> s l9 full

h eb c g cg b cg eb

```
THE ESTIMATED SEARCH COST FOR FILE 'REGISTRY' IS 155.00 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N or END:y
FULL SEARCH INITIATED 09:48:40 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -   7048 TO ITERATE

100.0% PROCESSED    7048 ITERATIONS                          22 ANSWERS
SEARCH TIME: 00.00.01

L11          22 SEA SSS FUL L9

=> file hcaplus
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                               156.26     421.59

FILE 'HCAPLUS' ENTERED AT 09:48:42 ON 07 SEP 2004
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FILE LAST UPDATED: 6 Sep 2004  (20040906/ED)

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 substance identification.


=> s l11/rct
            42 L11
       2654685 RCT/RL
L12         27 L11/RCT
                (L11 (L) RCT/RL)

=> d his

     (FILE 'HOME' ENTERED AT 09:38:44 ON 07 SEP 2004)

     FILE 'REGISTRY' ENTERED AT 09:38:49 ON 07 SEP 2004

     FILE 'CASREACT' ENTERED AT 09:43:04 ON 07 SEP 2004
L1              STRUCTURE UPLOADED
L2            0 S L1
L3            0 S L1 FULL
L4              STRUCTURE UPLOADED

     FILE 'REGISTRY' ENTERED AT 09:46:10 ON 07 SEP 2004
L5              STRUCTURE UPLOADED
L6            0 S L5
L7            8 S L5 FULL
```

h eb c g cg b cg eb

```
     FILE 'HCAPLUS' ENTERED AT 09:46:31 ON 07 SEP 2004
L8            12 S L7/PREP

     FILE 'REGISTRY' ENTERED AT 09:46:37 ON 07 SEP 2004
L9                STRUCTURE UPLOADED
L10            1 S L9
L11           22 S L9 FULL

     FILE 'HCAPLUS' ENTERED AT 09:48:42 ON 07 SEP 2004
L12           27 S L11/RCT

=> s l12 and l8
L13           9 L12 AND L8

=> file reg
COST IN U.S. DOLLARS                            SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                                 2.36     423.95

FILE 'REGISTRY' ENTERED AT 09:48:56 ON 07 SEP 2004
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STRUCTURE FILE UPDATES:    6 SEP 2004  HIGHEST RN 740796-45-6
DICTIONARY FILE UPDATES:   6 SEP 2004  HIGHEST RN 740796-45-6

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

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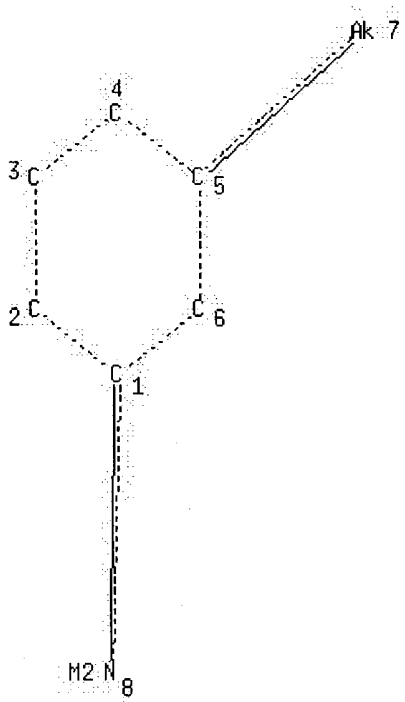
Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=>
L14     STRUCTURE UPLOADED

=> d l14
L14 HAS NO ANSWERS
L14             STR
```




```
NODE ATTRIBUTES:
HCOUNT  IS M2      AT    8
NSPEC   IS R       AT    1
NSPEC   IS R       AT    2
NSPEC   IS R       AT    3
NSPEC   IS R       AT    4
NSPEC   IS R       AT    5
NSPEC   IS R       AT    6
NSPEC   IS C       AT    7
NSPEC   IS C       AT    8
DEFAULT MLEVEL IS ATOM
MLEVEL  IS CLASS   AT    7  8
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS   8

STEREO ATTRIBUTES: NONE


=> s l14
SAMPLE SEARCH INITIATED 09:50:25 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 286466 TO ITERATE

  0.3% PROCESSED    1000 ITERATIONS                          8 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **INCOMPLETE**
                        BATCH   **INCOMPLETE**
PROJECTED ITERATIONS:      EXCEEDS 1000000
PROJECTED ANSWERS:         EXCEEDS   42963

L15           8 SEA SSS SAM L14

=> e m-toluidine/cn
```

h eb c g cg b cg eb

```
E1            1     M-TOLUIC-.ALPHA.,.ALPHA.,.ALPHA.-D3 ACID, 2-NITRO-/CN
E2            1     M-TOLUIC-CARBOXY-14C ACID/CN
E3            1 --> M-TOLUIDINE/CN
E4            1     M-TOLUIDINE .OMEGA.-METHANESULFONATE/CN
E5            1     M-TOLUIDINE 1:1 COMPLEX WITH IODINE/CN
E6            1     M-TOLUIDINE COMPLEX WITH P-BENZOQUINONE (1:1)/CN
E7            1     M-TOLUIDINE COMPOUND WITH S-TRINITROBENZENE (1:1)/CN
E8            1     M-TOLUIDINE HOMOPOLYMER/CN
E9            1     M-TOLUIDINE NITRATE/CN
E10           1     M-TOLUIDINE, ((2-CHLORO-4-(METHYLSULFONYL)PHENYL)AZO)-N,N-DI
                    METHYL-/CN
E11           1     M-TOLUIDINE, (2,4-THIOPHENEDIYLBIS(AZO))DI-/CN
E12           1     M-TOLUIDINE, .ALPHA.,.ALPHA.,.ALPHA.,-TRIFLUORO-6-((O-NITROP
                    HENYL)THIO)-/CN

=> s e3
L16           1 M-TOLUIDINE/CN

=> file hcaplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       5.69     429.64

FILE 'HCAPLUS' ENTERED AT 09:50:42 ON 07 SEP 2004
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FILE COVERS 1907 - 7 Sep 2004  VOL 141 ISS 11
FILE LAST UPDATED: 6 Sep 2004  (20040906/ED)

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


=> s l16
L17        4779 L16

=> d his

     (FILE 'HOME' ENTERED AT 09:38:44 ON 07 SEP 2004)

     FILE 'REGISTRY' ENTERED AT 09:38:49 ON 07 SEP 2004

     FILE 'CASREACT' ENTERED AT 09:43:04 ON 07 SEP 2004
L1              STRUCTURE UPLOADED
L2            0 S L1
L3            0 S L1 FULL
L4              STRUCTURE UPLOADED
```

h eb c g cg b cg eb

```
     FILE 'REGISTRY' ENTERED AT 09:46:10 ON 07 SEP 2004
L5                STRUCTURE UPLOADED
L6             0 S L5
L7             8 S L5 FULL

     FILE 'HCAPLUS' ENTERED AT 09:46:31 ON 07 SEP 2004
L8            12 S L7/PREP

     FILE 'REGISTRY' ENTERED AT 09:46:37 ON 07 SEP 2004
L9                STRUCTURE UPLOADED
L10            1 S L9
L11           22 S L9 FULL

     FILE 'HCAPLUS' ENTERED AT 09:48:42 ON 07 SEP 2004
L12           27 S L11/RCT
L13            9 S L12 AND L8

     FILE 'REGISTRY' ENTERED AT 09:48:56 ON 07 SEP 2004
L14               STRUCTURE UPLOADED
L15            8 S L14
                 E M-TOLUIDINE/CN
L16            1 S E3

     FILE 'HCAPLUS' ENTERED AT 09:50:42 ON 07 SEP 2004
L17         4779 S L16

=> s l17 and l13
L18            5 L17 AND L13

=> d l18, ibib abs hitstr, 1-5

L18  ANSWER 1 OF 5  HCAPLUS  COPYRIGHT 2004 ACS on STN
```

Full Text | Other References

```
ACCESSION NUMBER:          2003:931332  HCAPLUS
DOCUMENT NUMBER:           139:395829
TITLE:                     Process for the preparation of highly pure torsemide
INVENTOR(S):               Gutman, Arie; Etinger, Marina; Goldring, Dmitry;
                           Pertsikov, Boris; Yudovitch, Lev; Tishin, Boris;
                           Vilensky, Alexander; Glozman, Alexander; Nisnevich,
                           Gennady
PATENT ASSIGNEE(S):        Finetech Laboratories Ltd., Israel
SOURCE:                    PCT Int. Appl., 63 pp.
                           CODEN: PIXXD2
DOCUMENT TYPE:             Patent
LANGUAGE:                  English
FAMILY ACC. NUM. COUNT:    1
PATENT INFORMATION:

     PATENT NO.            KIND   DATE        APPLICATION NO.          DATE
     ----------------      ----   --------    --------------------     --------
     WO 2003097603          A1    20031127    WO 2003-IL311            20030415
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT,
             TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ,
             MD, RU, TJ, TM
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h eb c g cg b cg eb

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: IL 2002-149771 A 20020521

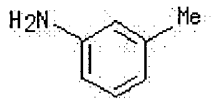
OTHER SOURCE(S): CASREACT 139:395829

AB The present invention provides a novel process for the prepn. of highly pure torsemide by reacting of 4-m-tolylamino-3-pyridinesulfonamide with Ph isopropylcarbamate in the presence of lithium base. The present invention also provides a novel intermediate - torsemide lithium, also in hydrate or solvate form - which is a stable, solid compd., and may be simply isolated from the reaction mixt. to give after acidification practically pure torsemide without further purifn. steps.

IT **108-44-1**, m-Toluidine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(in prepn. of highly pure torsemide)

RN 108-44-1 HCAPLUS

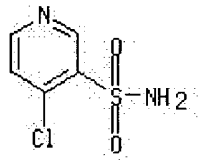
CN Benzenamine, 3-methyl- (9CI) (CA INDEX NAME)



IT **33263-43-3P**, 4-Chloro-3-pyridinesulfonamide **72811-73-5P** **160822-47-9P**
RL: **RCT (Reactant)**; SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(in prepn. of highly pure torsemide)

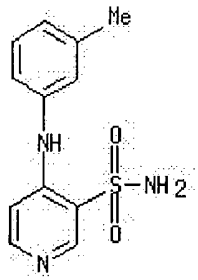
RN 33263-43-3 HCAPLUS

CN 3-Pyridinesulfonamide, 4-chloro- (8CI, 9CI) (CA INDEX NAME)



RN 72811-73-5 HCAPLUS

CN 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]- (9CI) (CA INDEX NAME)



RN 160822-47-9 HCAPLUS

CN 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]-, monohydrochloride (9CI) (CA INDEX NAME)

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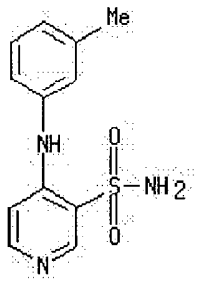


HCl

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

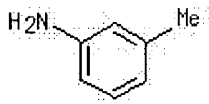
Full Text | Citing References

ACCESSION NUMBER: 2003:311134 HCAPLUS
DOCUMENT NUMBER: 139:197336
TITLE: Synthesis of a new, curative and effective medicine for hypertension and diuretic torasemide
AUTHOR(S): Xiong, Zhenhu; Fei, Xuening
CORPORATE SOURCE: Tianjin Institute of Urban Construction, Tianjin, 300384, Peop. Rep. China
SOURCE: Zhongguo Yaowu Huaxue Zazhi (2002), 12(4), 219-221, 224
CODEN: ZYHZEF; ISSN: 1005-0108
PUBLISHER: Zhongguo Yaowu Huaxue Zazhi Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
OTHER SOURCE(S): CASREACT 139:197336

AB Torasemide was prepd. in 5 steps with high yield from 4-hydroxypyridine by sulfonation, chlorination, amidation, substitution with 3-methylaniline, and condensation with iso-Pr isocyanate.

IT **108-44-1**, m-Toluidine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of torasemide)

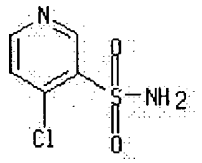
RN 108-44-1 HCAPLUS
CN Benzenamine, 3-methyl- (9CI) (CA INDEX NAME)



IT **33263-43-3P**, 4-Chloropyridine-3-sulfonamide **72811-73-5P**, 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]-
RL: **RCT (Reactant)**; SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(synthesis of torasemide)

RN 33263-43-3 HCAPLUS
CN 3-Pyridinesulfonamide, 4-chloro- (8CI, 9CI) (CA INDEX NAME)

h eb c g cg b cg eb



RN 72811-73-5 HCAPLUS
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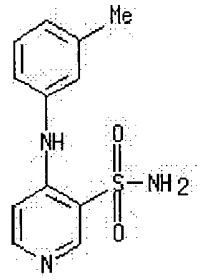


L18 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

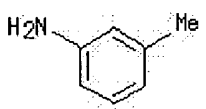
Full Text | Citing References

ACCESSION NUMBER: 1995:301468 HCAPLUS
DOCUMENT NUMBER: 122:105616
TITLE: Chemical structure and physico-chemical properties of torasemide
AUTHOR(S): Kondo, Nobuo; Kimura, Masazo; Yamamoto, Madoka; Hashimoto, Hirotaka; Kawamata, Ken-ichiro; Kawano, Kensuke; Schmidt, Heinrich
CORPORATE SOURCE: New Product Res. Laboratories, Green Cross Corp., Hirakata, 573, Japan
SOURCE: Iyakuhin Kenkyu (1994), 25(9), 734-50
CODEN: IYKEDH; ISSN: 0287-0894
PUBLISHER: Nippon Koteisho Kyokai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB The chem. structure of torasemide, a diuretic agent, was confirmed on the basis of elemental anal., UV, IR, NMR and mass spectra. The physico-chem. properties were clarified by studying the appearance, soly., hygroscopicity, photo-stability, m.p., thermal anal., pH of aq. soln., dissocn. const., partition coeff., polymorphism, specific optical rotation and impurities. Investigations into the stability of torasemide under severe conditions were also conducted to define the degradative pathway for the compd.

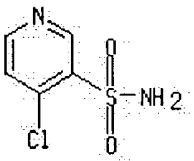
IT **108-44-1**, reactions **33263-43-3**, 4-Chloropyridine-3-sulfonamide
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(synthesis and physico-chem. properties of torasemide)

RN 108-44-1 HCAPLUS
CN Benzenamine, 3-methyl- (9CI) (CA INDEX NAME)

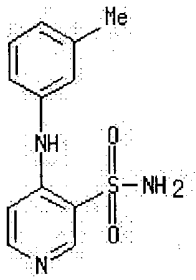


RN 33263-43-3 HCAPLUS
CN 3-Pyridinesulfonamide, 4-chloro- (8CI, 9CI) (CA INDEX NAME)

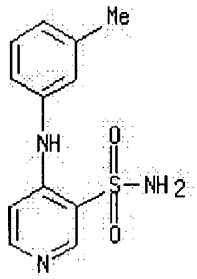
h eb c g cg b cg eb



IT **72811-73-5P 160822-47-9P**
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(synthesis and physico-chem. properties of torasemide)
RN 72811-73-5 HCAPLUS
CN 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]- (9CI) (CA INDEX NAME)



RN 160822-47-9 HCAPLUS
CN 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]-, monohydrochloride (9CI) (CA INDEX NAME)



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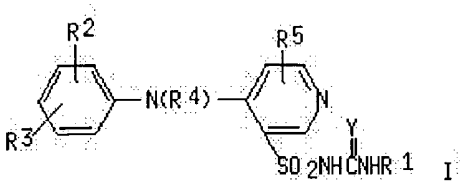
L18 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

Full Text | Citing References

ACCESSION NUMBER: 1988:160942 HCAPLUS
DOCUMENT NUMBER: 108:160942
TITLE: Chemistry and pharmacological properties of the pyridine-3-sulfonylurea derivative torasemide
AUTHOR(S): Delarge, J.
CORPORATE SOURCE: Inst. Pharm., State Univ. Liege, Liege, B-4000, Belg.
SOURCE: Arzneimittel-Forschung (1988), 38(1A), 144-50
CODEN: ARZNAD; ISSN: 0004-4172
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 108:160942
GI

h eb c g cg b cg eb



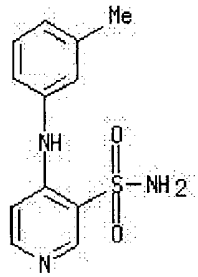
I

AB Out of a series of pyridine-3-sulfonylureas (I; R1 = Me, Et, Pr, etc.; R2 = 3-CF3, 3-NO2, 3-MeO, 3-Me, 3-Et, 2-, 3-, 4-Cl, etc.; R3 = H or 4-, 5-Cl; R4 = R5 = H or Me; Y = O or S) with diuretic activity torasemide (I; R1 = i-Pr, R2 = 3-Me, R3 = R4 = R5 = H, Y = O), which was prepd., proved to be one of the most active derivs. In the rat, urinary vol. and electrolyte excretions increased linearly with the logarithm of the dose, thus resembling the profile of a high ceiling diuretic. Torasemide was equally potent both by oral and parenteral administration. Compared to furosemide, torasemide was 9-40 times more potent on wt. basis in the rat. For the same natriuretic effect, however, K+ losses with torasemide were less than with furosemide. The diuretic effect of torasemide lasted longer than that of furosemide. The plasma elimination half-life of torasemide was ~1.5 h in the rat and bioavailability was nearly complete. Torasemide was 98-99% bound to plasma proteins. No in vitro interaction was found with the coumarin deriv. warfarin.

IT 72811-73-5P, 3-Sulfonamido-4-(3-methylanilino)pyridine
RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(prepn. and reaction with isopropylcyanate)

RN 72811-73-5 HCAPLUS

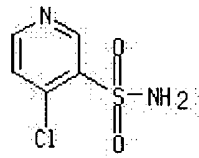
CN 3-Pyridinesulfonamide, 4-[(3-methylphenyl)amino]- (9CI) (CA INDEX NAME)



IT 33263-43-3P
RL: **RCT (Reactant)**; SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction with toluidine or isopropylcyanate)

RN 33263-43-3 HCAPLUS

CN 3-Pyridinesulfonamide, 4-chloro- (8CI, 9CI) (CA INDEX NAME)

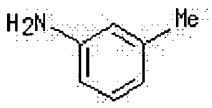


IT 108-44-1, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chloropyridinesulfonamide or isopropylchloropyridylsulfonylurea)

RN 108-44-1 HCAPLUS

h eb c g cg b cg eb

CN Benzenamine, 3-methyl- (9CI) (CA INDEX NAME)



L18 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2004 ACS on STN

Full Text | Citing References

ACCESSION NUMBER: 1976:59218 HCAPLUS
DOCUMENT NUMBER: 84:59218
TITLE: Pyridine derivatives
INVENTOR(S): Delarge, Jacques E.; Lapiere, Charles L.; Georges, Andre H.
PATENT ASSIGNEE(S): Christiaens, A., S. A., Belg.
SOURCE: Ger. Offen., 39 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2516025	A1	19751106	DE 1975-2516025	19750412
DE 2516025	C2	19881103		
ZA 7502243	A	19760331	ZA 1975-2243	19750408
BE 827844	A1	19751013	BE 1975-155330	19750411
ES 436581	A1	19770401	ES 1975-436581	19750414
IL 47084	A1	19790131	IL 1975-47084	19750414
SE 7504409	A	19751020	SE 1975-4409	19750416
SE 424320	B	19820712		
SE 424320	C	19821021		
NL 7504521	A	19751021	NL 1975-4521	19750416
NL 183580	B	19880701		
NL 183580	C	19881201		
FR 2267775	A1	19751114	FR 1975-11791	19750416
FR 2267775	B1	19781110		
US 4018929	A	19770419	US 1975-568759	19750416
AT 7502882	A	19771115	AT 1975-2882	19750416
AT 345832	B	19781010	AT 1977-1898	19750416
CH 609045	A	19790215	CH 1975-4857	19750416
CH 610890	A	19790515	CH 1978-2163	19750416
CH 612424	A	19790731	CH 1978-2164	19750416
CA 1070313	A1	19800122	CA 1975-224805	19750416
JP 50142571	A2	19751117	JP 1975-47371	19750417
JP 59051536	B4	19841214		
DD 121936	C	19760905	DD 1975-185508	19750417
DD 126887	C	19770817	DD 1975-194800	19750417
US 4042693	A	19770816	US 1976-694422	19760609
US 4055650	A	19771025	US 1976-694421	19760609
ES 453328	A1	19771101	ES 1976-453328	19761115
ES 453327	A1	19771116	ES 1976-453327	19761115
ES 453329	A1	19771116	ES 1976-453329	19761115
AT 7701899	A	19771115	AT 1977-1899	19770318
AT 7701897	A	19771115	AT 1977-1897	19770318
SE 7907618	A	19790913	SE 1979-7618	19790913
US 30633	E	19810602	US 1980-119601	19800207

h eb c g cg b cg eb

PRIORITY APPLN. INFO.:

GB 1974-16836	19740417
GB 1975-16836	19750414
AT 1975-2882	19750416
US 1975-568759	19750416
US 1979-31101	19790418

GI For diagram(s), see printed CA Issue.

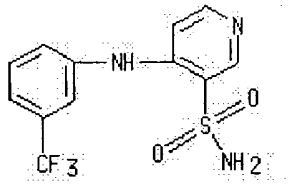
AB Pyridinesulfonamides I [R = C6H4R3 (R3 = Cl, F3C, Me, MeO, H, Br, F, NO2, Et, NH2), Et, iso-Pr, 4-methylfuryl, C6H3Cl2, C6H3(CF3)Cl; R1 = alkylcarbamoyl, cyclohexylcarbamoyl, CSNHCH2CH:CH2, CONHPh, CONHC6H4Cl-p, alkylthiocarbamoyl, H, COEt; R2 = H, Me; X = NH, NMe, O, S, NEt; n = 0, 1], useful as inflammation inhibitors and diuretics, were prepd. by various methods, e.g., treatment of I (R1 = H) with an isocyanate or isothiocyanate. Reaction of I (R1 = H) with an alkyl haloformate, then with an amine, gave I (R1 = substituted carbamoyl). II reacted with amines R5NHR to give I (X = NH, NMe, NEt). II was treated with NaXR (R = substituted phenyl, X = O, S) to give the corresponding I. To prep. I (R1 = acyl) or pyridothiadiazole III, I (R1 = H) was reacted with EtCOCl, (EtCO)2O, or BzCl. Treatment of I (R = alkylthiocarbamoyl) with aq. alc. Na2CO3 and HgO gave I (R1 = alkylcarbamoyl). Oxidn. of I (n = 0) gave I (n = 1). I caused 1.6-92.0% inhibition of carrageenan-induced edema in rats [best results by I (R = 3,4-Cl2C6H3, R1 = CONHCHMe2, X = NH, R2 = H, n = 0] and caused 3.6-106.4 mg/kg increase in urine of rats [best results by I (R = 3-F3CC6H4, R1 = CONHEt, X = NH, R2 = H, n = 1)].

IT **38030-43-2P**

RL: RCT (Reactant); SPN (Synthetic preparation); **PREP (Preparation)**; RACT (Reactant or reagent)
(prepn. and reactions of)

RN 38030-43-2 HCAPLUS

CN 3-Pyridinesulfonamide, 4-[[3-(trifluoromethyl)phenyl]amino]- (9CI) (CA INDEX NAME)

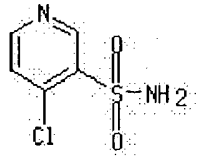


IT **33263-43-3**

RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(reaction of, with chlorophenol)

RN 33263-43-3 HCAPLUS

CN 3-Pyridinesulfonamide, 4-chloro- (8CI, 9CI) (CA INDEX NAME)



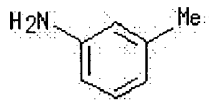
IT **108-44-1**

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chloropyridinesulfonamide oxide)

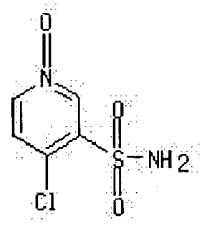
RN 108-44-1 HCAPLUS

CN Benzenamine, 3-methyl- (9CI) (CA INDEX NAME)

h eb c g cg b cg eb



IT **58155-57-0**
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(reaction of, with toluidine)
RN 58155-57-0 HCAPLUS
CN 3-Pyridinesulfonamide, 4-chloro-, 1-oxide (9CI) (CA INDEX NAME)



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FILE 'CASREACT' ENTERED AT 09:43:04 ON 07 SEP 2004
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L2 0 S L1
L3 0 S L1 FULL
L4 STRUCTURE UPLOADED

FILE 'REGISTRY' ENTERED AT 09:46:10 ON 07 SEP 2004
L5 STRUCTURE UPLOADED
L6 0 S L5
L7 8 S L5 FULL

FILE 'HCAPLUS' ENTERED AT 09:46:31 ON 07 SEP 2004
L8 12 S L7/PREP

FILE 'REGISTRY' ENTERED AT 09:46:37 ON 07 SEP 2004
L9 STRUCTURE UPLOADED
L10 1 S L9
L11 22 S L9 FULL

FILE 'HCAPLUS' ENTERED AT 09:48:42 ON 07 SEP 2004
L12 27 S L11/RCT
L13 9 S L12 AND L8

FILE 'REGISTRY' ENTERED AT 09:48:56 ON 07 SEP 2004
L14 STRUCTURE UPLOADED
L15 8 S L14
E M-TOLUIDINE/CN
L16 1 S E3

FILE 'HCAPLUS' ENTERED AT 09:50:42 ON 07 SEP 2004
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L18 5 S L17 AND L13

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h eb c g cg b cg eb

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L20          0 L18 AND GUNTOORI, B?/AU

=> s l18 and duncan, s?/au
           244 DUNCAN, S?/AU
L21          0 L18 AND DUNCAN, S?/AU

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                                                      ENTRY     SESSION
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=> d his

     (FILE 'HOME' ENTERED AT 09:38:44 ON 07 SEP 2004)

     FILE 'REGISTRY' ENTERED AT 09:38:49 ON 07 SEP 2004

     FILE 'CASREACT' ENTERED AT 09:43:04 ON 07 SEP 2004
L1             STRUCTURE UPLOADED
L2           0 S L1
L3           0 S L1 FULL
L4             STRUCTURE UPLOADED

     FILE 'REGISTRY' ENTERED AT 09:46:10 ON 07 SEP 2004
L5             STRUCTURE UPLOADED
L6           0 S L5
L7           8 S L5 FULL

     FILE 'HCAPLUS' ENTERED AT 09:46:31 ON 07 SEP 2004
L8          12 S L7/PREP

     FILE 'REGISTRY' ENTERED AT 09:46:37 ON 07 SEP 2004
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h eb c g cg b cg eb

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L9                STRUCTURE UPLOADED
L10             1 S L9
L11            22 S L9 FULL

     FILE 'HCAPLUS' ENTERED AT 09:48:42 ON 07 SEP 2004
L12            27 S L11/RCT
L13             9 S L12 AND L8

     FILE 'REGISTRY' ENTERED AT 09:48:56 ON 07 SEP 2004
L14               STRUCTURE UPLOADED
L15             8 S L14
                  E M-TOLUIDINE/CN
L16             1 S E3

     FILE 'HCAPLUS' ENTERED AT 09:50:42 ON 07 SEP 2004
L17          4779 S L16
L18             5 S L17 AND L13
L19             0 S L18 AND CHE, D?/AU
L20             0 S L18 AND GUNTOORI, B?/AU
L21             0 S L18 AND DUNCAN, S?/AU

     FILE 'CAOLD' ENTERED AT 09:51:56 ON 07 SEP 2004

=> s l7 and l11
                0 L7
                0 L11
L22             0 L7 AND L11

=>
```

h eb c g cg b cg eb